

nations after death, between a moderate collection of crude tubercles and almost complete destruction of the lungs, there will be found every degree of gradation. There is then, a great difference in different cases in the intrinsic tendency of the disease to a fatal result, independently of the morbid condition of the lungs. This fact is to be taken into account in judging of the success of treatment. Measures which may succeed in the cases in which the diathesis is weak, may be wholly nugatory when the diathesis is strong. The tendency of the disease, in a large proportion of cases, is to end fatally sooner or later; but there are exceptions to this rule. The cachexia may be, as it were, exhausted by a small deposit, and the disease thus undergoing arrest, recovery takes place, perhaps without any remedial measures. The frequency with which obsolete tubercles are found in bodies dead with various affections, is in this way accounted for. We are satisfied that spontaneous arrest and recovery from tuberculosis takes place much oftener than is generally supposed. And the object of the physician is to aid in effecting what nature unaided sometimes effects, viz., the removal of the cachexia and the eradication of the diathesis. It cannot be too much reiterated that this object is to be effected, not by special medication, but hygienic measures, by which the body is invigorated, renovated and reconstructed.

Of the two works whose title-pages preface this review, we have noticed certain parts only, which relate to the pathology and hygienic treatment of consumption. The work by Dr. Cotton embraces a brief consideration of the general characters, minute structure, and chemical composition of tubercle; its situation; the identity of consumption and scrofula; the relation of consumption to other diseases; the causes of the disease, its symptomatology and its physical signs. Dr. Richardson's work is more limited in its scope, being confined to the hygienic treatment. It contains much interesting and useful information within a small compass, and is written in a sprightly, racy style, which renders it quite attractive. A. F.

ART. XIII.—*On Epilepsy and Epileptiform Seizures, their Causes, Pathology, and Treatment.* By EDWARD HENRY SIEVEKING, M. D., Fellow of the Royal College of Physicians; Physician to, and Lecturer upon Materia Medica at, St. Mary's Hospital; etc. etc. etc. 12mo. pp. 267. London, 1858.

*Epilepsy and other Convulsive Affections, their Pathology and Treatment.* By CHARLES BLAND RADCLIFFE, M. D., Physician to the Westminster Hospital, etc. Second edition, revised and enlarged. 12mo. pp. 383. London, 1858.

THE etiology and pathology of convulsive diseases still remain open subjects for investigation. Our knowledge in relation to them is as yet inexact and limited—much more so than might reasonably have been expected considering the light that has been shed upon the physiology of every portion of the nervous system by the labours of recent experimentalists, and the long array of facts that have been recorded in illustration of its several morbid conditions.

We may, perhaps, confidently assume, as a general proposition, that all

convulsive phenomena, from the mere twitching of a single muscle to the most violent and prolonged agitation of every voluntary muscle of the body, are the result of an irritation or other morbid condition of some portion of the nervous centres, and that the variations observed in the character of the convulsive seizures in different cases are due to the particular portion of the nervous centres, which is the seat of the irritation or disease, and to the greater or less extent of these centres which is morbidly affected.

We are probably justified in advancing even a step further than this—by referring the predisposition to the occurrence of convulsions in certain individuals, while others are almost entirely exempt from them under apparently the same kind and degree of irritation—the same form and extent of disease—to a particular condition of constitution inherited or acquired—a peculiar nervous temperament, a convulsive diathesis. This condition of constitution, marked by an imminency of convulsive movements in the voluntary muscles from often slight and transient morbid impressions, is the same state as that which writers on convulsive diseases have endeavoured to represent by the expressions morbid nervous mobility or excitability—nervous debility, etc.

But, even should the truth of the foregoing propositions be fully and universally recognized, this would advance us but a step or two in our acquaintance with the etiology and pathology—the actual causation and true nature of any of the diseases attended and characterized by convulsive seizures. It would be very far from covering the entire ground embraced in the philosophy of these diseases. The questions would still present themselves for solution: Are they dependent in all cases upon a morbid impressibility of the nervous system without actual disease? Are they ever the result of a diseased condition of any portion of the nervous centres, and if so, what is the nature of that condition? Can they be produced by certain abnormal irritations acting upon a nervous system, neither diseased in any part nor morbidly sensitive to impressions made upon it? What is the relation existing between the convulsive seizures and certain morbid phenomena with which we find these seizures associated in certain cases? and what is the nature and causation of those phenomena? Thus, we find that, in reference to the most important circumstances, in a practical point of view, connected with the pathology of convulsive diseases, we remain still in utter ignorance, and, until that ignorance is removed, it must be evident that the treatment of those diseases can rest upon no better basis than mere empiricism.

At the very head of the convulsive affections may be ranked epilepsy, as at once their great type, and the key to their interpretation. It owes its pre-eminence to the violence of the paroxysms of general convulsions by which it is characterized—the suddenness of their onset, and the strange and apparently inexplicable symptoms by which they are accompanied. And it becomes the type of the entire list of convulsive maladies from the fact, that it embraces nearly all forms of convulsive movement, from the tetanic spasm to the rapid contraction and extension of the limbs, and the most frightful and extravagant contortion of the features. It must be evident, therefore, that every advance towards the elucidation of its pathology must very effectually clear the way for a correct understanding of the theory of convulsive diseases generally.

The entire phenomena of epilepsy, in many respects so strange, mysterious, and appalling—the comparative frequency of the disease, and its melancholy results when violent or protracted, have all tended to render it

the subject of close and anxious investigation on the part of some of the ablest physicians of the past and present times. Although each successive inquirer, in common with those who have preceded him, has failed to reveal its true pathology, still, every year new inquirers come to the work with increasing confidence that each new advance which is made in our knowledge of the physiology of the nervous system will render them more successful in their efforts to remove from the character and nature—the seat and causation of epilepsy, the mystery in which they are still enveloped.

Among the many treatises on epilepsy which have appeared within a recent period, the two whose titles are given at the head of this article are among the most complete and interesting—the fullest and most accurate in their analysis of the phenomena of the disease; the most consistent and satisfactory in their exposition of its pathology; the most philosophical in their development of the therapeutic principles upon which its successful treatment, as well curative as prophylactic, must be based; and the most clear and definite in their teachings with respect to the measures, remedial and hygienic, by which those principles are to be carried out in practice.

We apply to both these works the same general terms of commendation. Though in some respects they differ widely from each other, still their authors have unquestionably dealt with the leading circumstances bearing upon the disease of which they treat with great clearness and ability. They both arrive at nearly the same etiological, pathological, and therapeutical conclusions, though expressed in somewhat dissimilar terms, and arrived at from somewhat different premises. In many respects the treatise of Dr. Sieveking may be pronounced, perhaps, superior to that of Dr. Radcliffe. The former confines his investigation within a narrower compass, directing it exclusively to the subject of epilepsy and epileptic seizures, while the latter takes in the entire list of convulsive diseases, and devotes fruitlessly, also, a large portion of his work in the exposition of a theory of muscular motion, which can never, we are convinced, be generally received.

The question as to the proper treatment of epilepsy is discussed with very great ability, certainly, by both authors. We think, however, that the examination of the question, as presented by Dr. Sieveking, will be found to be the most full, explicit, and philosophical of the two—and to take more into consideration the modification of remedies demanded by the varying features presented by the disease in different patients—by the circumstances of age, condition, and habits in its subjects, and by the date of the attack; having a due reference, also, to the moral and hygienic conditions that are calculated to counteract or concur with the efforts of the physician to prevent or eradicate the disease.

The peculiar characteristics of the epileptic paroxysm or seizure, which has given to the disease its name, and has been by many looked upon, apparently, as constituting the entire morbid condition present in those in whom it occurs, are so perfectly familiar to every physician that it is scarcely necessary to enumerate them. In every description of epilepsy is noted the sudden occurrence of the fits—usually with a shrill, appalling scream—the patient being at once dashed to the ground, when spasmodic contractions of the voluntary muscles at once ensue, and quickly pass into violent convulsive distortions, attended with entire loss of sensation and consciousness. Nearly all authorities agree that, in many instances at least, the accession of the fit is immediately preceded by a transient sensation of a peculiar character, which admonishes the patient of what is about to occur. We need only add, that after a period, varying from ten to twenty minutes,

the epileptic paroxysm usually subsides, profuse perspiration ensues, consciousness returns, and the patient is restored to comparative health. The fit being ordinarily followed by considerable drowsiness, terminating in a deep, natural, refreshing sleep.

Although there is a very great uniformity in the general character of the epileptic fit, as it is observed in different cases, still its individual features will often vary in the frequency of their occurrence as well as in their intensity; and as it is well known that the several affections of the nervous system are liable to merge into each other, the diagnosis between epilepsy and other closely allied diseases, particularly at its commencement, may occasionally be attended with some difficulty.

A most admirable analysis of the several phenomena, the concurrence of which constitutes the epileptic paroxysm, with the view to determine their relative value and frequency, is presented by Dr. Sieveking. From this analysis it will be seen that the convulsive paroxysm of epilepsy varies very considerably in regard to the presence and prominence of certain of its features—especially in the character, degree, and location of the convulsive movements. These are found to pass through every change, from the spasm of an individual muscle to the most violent agitation of the entire voluntary motive apparatus of the body.

“In many cases,” says Dr. S., “nothing but a slight spasm is perceptible about the muscles of the neck, in others nothing but a contraction of the fingers or toes—the carpopedal contractions of authors—indicates the nature of the seizure, or the eyes only are peculiarly affected, or, again, a close observer is able to detect nothing of a spasmodic character, and the inference of the case before him being epileptic might be unsafe, unless in the same individual more decided epileptic seizures had been previously manifested, or unless he found that the symptoms were identical with those observed in other instances where the epileptic nature was undoubted.”

The abnormal sensation by which the fit is often ushered in, and which Dr. S. considers to be improperly described as an *aura*, or *draught*, or *current*, is present in perhaps one-half the cases of epilepsy, according to the experience of Dr. S.; so far as our observations on this point go, however, it is much less frequent. The same patient may be sensible of it in some of his attacks, but not in others. This we have known to happen in repeated instances. The sensation preceding the fit, when it does occur, varies greatly in its character, and in a few cases it has been found to be sufficiently curious and bizarre. According to Dr. S., the various premonitions of the epileptic fit may be readily arranged in two classes, namely:—

“Those that are referred to the trunk and extremities, and those that appear at once to affect the head. In the former case, the sensation is always described as mounting towards the head, and in the majority of cases the paroxysm appears to strike down the patient on its reaching that part; in the latter, the sensation commonly takes the form of some strange illusion, which, however, the patient is able to recognize as such.”

The two classes of sensations, above referred to, are in all probability connected with the centric or eccentric origin of epilepsy.

Although insensibility is almost invariably recognized as an essential feature of the true epileptic paroxysm, yet it has been shown by Dr. S. that convulsive seizures, with all the other characteristics of epilepsy, do occur, in which a certain amount of consciousness is retained throughout. This has been regarded by some as an indication that the convulsive paroxysms

are dependent in such cases upon a local rather than upon a constitutional affection.

Cases of epilepsy are related by respectable authors in which the convulsive movements were limited to a small number of muscles—those of a single limb for instance. The propriety of considering such cases as examples of genuine epilepsy, may, in our opinion, be very properly doubted.

The trachelisms, upon which Dr. Marshall Hall bases the entire theory of the disease, Dr. S. admits may take place, but he considers it to be of secondary importance to other morbid conditions present during the convulsive paroxysm.

"While," he remarks, "it would be impossible to deny that spasm of the muscles of the neck, the platysma, sterno-cleido-mastoid, scaleni, and trapezius more particularly, materially affects the circulation of the blood in the vessels of the part, the literal interpretation and careful observation of all the symptoms of epilepsy will not allow of our regarding this as more than a small part of the phenomena. The experiments of Sir Astley Cooper show that compression of the arteries leading to the head may induce epileptic seizures in animals, and while there is ample pathological evidence to show that morbid conditions, inducing compression of the vessels of the neck generally, are frequently associated with epilepsy, cases of an opposite character are not wanting in the history of medicine."

The condition of the pulse during the epileptic paroxysm is without any very positive pathognomonic significance. Dr. S. has found its prevailing character, in the majority of cases that have fallen under his observation, to be the same as is met with in subjects deficient in blood and tone.

"It is generally much accelerated, feeble, and soft. In cases exhibiting more of the sanguineous and florid type, the pulse may present no variation from the normal character. The same will probably be the case when the attacks have only commenced recently, or occur at long intervals. The more frequent they are, the more perceptible will be the derangement of the circulation; but in no case does it appear that even prolonged cases of epilepsy exercise any definite influence upon the central organ of the circulation. Nor can any causal relation be traced, such as exists between chorea and morbid conditions of the heart. In short, the manifestations of any influence of epilepsy upon the circulation appear to be confined to such effects as may be found in any circumstances which at once enfeeble the individual while they excite the circulation."

The frequency with which the paroxysms occur varies greatly. They are, at first, generally separated by intervals of several months, but gradually the intervals become shortened, until the paroxysms may recur daily, or many times each day. Their occurrence is never marked by anything like regular periodicity, though sometimes, in the female, they would appear to bear an evident relation to the catamenial periods. Such periodicity, as Dr. S. very truly remarks, even were it uniformly observed, can scarcely be said to constitute a feature of the epilepsy; the semblance of periodicity is due to the induction of the convulsive seizure depending upon another condition which is in its nature of a periodical character.

Sleep would appear to excite the epileptic fit, from the physiological effect which the state of somnolence exerts upon the brain. All, however, it appears to us, that facts will bear us out in asserting is, that there is "a peculiar proclivity in some epileptics to nocturnal seizures." In the cases observed by us, the seizure took place very frequently at night, but certainly not more so than during the daytime, when the patients were awake, and often when they were engaged in some occupation.

The epileptic paroxysm would appear to occur with pretty nearly equal

frequency throughout every season of the year. In our own experience we have certainly found them to be most frequent, however, during the warmest and the coldest months.

Headache is considered by Dr. S. as bearing a close relation to the epileptic fit, and as of momentous import in reference to the pathology of the disease. Headache occurring immediately after the convulsive paroxysm is often, it is true, simply the effect of the latter; but when headache is experienced by the epileptic habitually, or when it precedes the convulsive seizure, it has a much more important and serious significance. Habitual headache Dr. S. has observed to be, in many instances, an indication of a strong predisposition to epilepsy, or to occur, possibly, in a subject in whom the epileptic paroxysm has been manifested merely by slight vertiginous attacks, by a single attack in former times, or by some spasmodic action that alone would not be regarded as of an epileptiform character. The pain in this form of headache may affect any part of the head, but it is frequently limited to a spot at the vertex.

Generally, the epileptic fit is followed by a state of somnolency. "Instead of the sleepiness, we sometimes observe a state approaching to or constituting actual delirium—or the same patient at one time sleeps a long time after the fits, and then a period comes when he or she is delirious for several hours after the paroxysm has gone off."

"This," to complete the history of the progress and end of the whole affair, in the beautiful summary of Dr. Radcliffe—

"This is the usual, but not invariable course of the fit. Indeed, the attempts at rallying may be very imperfect, and fit after fit may recur for a long period without any interval of waking, or all rallying may be prevented by death.

"— After waking, there are generally some symptoms of reaction in the circulation; but in simple epilepsy these are never very marked. They may be enough to give a dull flush to the cheek and add a little fullness to the pulse, for a short time after the patient wakes; but, as a rule, these symptoms cease when the coma ceases, and the coma is never much prolonged in simple epilepsy. Usually the patient is headachy and exhausted, listless and stunned, moody and irritable, until a night's rest has enabled him to recover the balance of his shaken nervous system. The faded countenance also tells plainly of the past struggle, even though it may present none of those numerous and minute dots of ecchymosis about the eyelids and upon the forehead, which are such unequivocal signs of a severe attack of epilepsy.

"As time goes on, the mental faculties recover more and more imperfectly, and more and more tardily, and at last their habitual state may be one of pitiful fatuity, from which no single ray of the divine principle beams forth. Or the moodiness and irritability which follow the attack may become more and more marked, until at last they merge into attacks of downright mania. Or symptoms of paralysis may make their appearance; or death may happen in a fit or shortly afterwards. The natural tendency of epilepsy is assuredly towards dementia; and dementia is the final doom of the epileptic, if his disorder be unchecked, and life prolonged sufficiently; and this equally, whether symptoms of insanity have or have not been developed; but, at the same time, it is possible for an epileptic to have many fits, and live many years, without ever losing the powers which are necessary to render him an agreeable and serviceable member of society. If death happens, it happens most generally from exhaustion in the period of prostration immediately following the paroxysm."

The great error that has been committed in investigating the pathology of epilepsy, has been the restricting of attention too exclusively to the convulsive paroxysm, overlooking the morbid phenomena present during the intervals, as indicating a permanently abnormal condition of certain organs,

as that constituting in a proper sense the actual disease, and of which the convulsive seizures are but one of the symptoms. Or, when the morbid phenomena that exist in the intervals between the convulsive seizures are recognized, viewing them as mere effects of the paroxysms, rather than as the results of the same morbid conditions that produce the convulsive seizures themselves. As Dr. S. has well observed, it is impossible to arrive at a correct appreciation of the epileptic paroxysm so long as it is studied separately from the intervening periods or so-called free intervals. He has, therefore, with great care, investigated the condition of the epileptic in the intervals between the paroxysms, and accurately noted the morbid phenomena which are then most generally to be met with. They will be found to be such as are universally recognized to be indicative of more or less disturbance of the cerebro-spinal functions.

A single epileptic seizure may occasionally take place, and pass away never to be repeated, and if we are correct in considering the convulsions of infancy as truly epileptiform, single non-recurring paroxysms are of much more frequent occurrence than Dr. S. would seem willing to allow. It is very certain that a very strong relationship exists between the convulsions of infants and true epilepsy—if the two be not, in a strict pathological sense, identical. The proof of this is found in the fact that those who have been during infancy subject to repeated convulsive attacks, are among those most prone to epileptic seizures in after life.

The more frequent the epileptic paroxysms recur, the more marked will be the morbid phenomena which occur in the intervals; still, as Dr. S. remarks, a careful observer will rarely fail to discover a certain peculiar deviation from health in all epileptic patients—even in those whose convulsive seizures occur only after very long intervals.

“There will be the characteristics of a nervous diathesis; an excitable, frequently irritable, manner; a restless eye; a quick but feeble pulse; more or less difficulty in collecting the thoughts, and connecting the different links of mental association, while, at the same time, one or other of the organic functions presents a palpable deviation from health: the organs that are more particularly under the domain of the sympathetic ordinarily show that they are deficient in vigor, that they want that stimulus which the vascular and nervous systems supply when the individual enjoys robust health.”

The symptoms most commonly present in epileptics during the intervals of the fits, are constipation, eructations and flatulence; enlargement of the pupils; occasional vertigo; anomalous sensations in different parts of the body; more or less habitual headache, with or without vertigo; slight partial spasmodic seizures, giving rise more especially to a distressing sense of suffocation or choking.

Epileptic vertigo, as well as epileptic headache, is described by Dr. S. as often existing for a long time—many years perhaps—before the occurrence of an epileptic seizure. Frequent, brief attacks of vertigo, and semi-unconsciousness, occurring in the intervals of the convulsive paroxysms, are always to be viewed as symptoms of very serious import. They are often conjoined with failure of memory, difficulty of articulation and dysphagia.

Subsequent to the paroxysm, temporary paralysis of a part, or of the entire body may remain; when partial, giving rise, in some cases, to stammering, or to distortions of the hands or feet. These latter phenomena may even become permanent.

The epileptic, long before actual idiocy sets in, will in most cases have an expression of hebetude—a peculiar heaviness about the eyes; a pasty,

leadens, or livid hue of countenance; puffiness of the face, and a thickness and coarseness about the lips, with often a constant dribbling of the saliva from the mouth. The peripheral circulation is sluggish, hence epileptics are chilly and liable to coldness of the extremities.

As to the immediate cause of death in epilepsy nothing satisfactory can be affirmed. Dr. S. points out, however, the frequency with which the fatal event is associated with symptoms of an apoplectic character.

With respect to the causes of epilepsy, everything is involved in doubt and obscurity. Upon this subject the most opposite opinions have been entertained—diametrically opposite observations have been adduced, and the most loose and discordant statistics appealed to.

Dr. S. thinks it probable that in the production of the first onset of the epileptic paroxysm both a predisposing and an exciting influence invariably concur. It is very certain that all those circumstances which have been observed to predispose to the disease may be present without the occurrence of an epileptic seizure, while, on the other hand, individuals have been fully exposed to the same influences which have been known to induce the epileptic paroxysm in others, without their becoming epileptic. When, however, a seizure has once taken place, it will usually be reproduced under much more trivial circumstances than brought it on in the first instance—often, indeed, without any recognizable exciting cause.

“The great bulk of the evidence,” Dr. S. remarks, “is in favour of the view that the predisposing influences enfeeble the body, and more especially the nervous system. The disease is regarded by the great majority of authors, past and present, as one of debility, and the influences that induce it are such as would weaken the individual, and expose him to the reception of noxious influences of all kinds. Hence we may assume something more than the predisposing influences, commonly so called—namely, a peculiar habit of body, which we are certainly unable to define, but which, for want of a better term, may be called a nervous diathesis.”

Epilepsy is a disease common to all climates, and all countries. It affects alike individuals of all conditions of society, of both sexes, and of every age of life, and apparently of all races and peoples.

That the disease, though usually of sporadic occurrence, has occasionally prevailed in an epidemic form, there seems to be little doubt. In the histories handed down to us of the convulsive epidemics of the middle ages, the epileptiform character of many of them is easily recognized, while by physicians of the present century we are furnished with accounts of similar epileptiform epidemics, as that of Teheran, in India, in 1842, described by C. W. Bell, in the *Medico-Chirurgical Transactions*, and the peculiar “epidemic epilepsy” which prevailed in Kentucky previous to 1805, and accurately described by Dr. Sutton, in the last volume of the *Transactions of the American Medical Association*.

Whether males or females are the most frequent subjects of epilepsy, is a question in respect to which there exists no little discrepancy of opinion. Our own observations, and the statistics we have been enabled to collect from other sources, show a decided preponderance of male over female epileptics. This would appear to be in accordance with the observations of nearly all the continental authorities excepting the French.

There can be no doubt that the period of puberty is that at which the invasion of true epileptic paroxysms most frequently takes place, unless, as we believe would be perfectly correct, we recognize the convulsions of infants as epileptic, when the period of dentition would be strictly that at which the invasion of the disease most frequently occurs.



Dr. S. sets down hereditary influence as an evident predisposing cause of epilepsy. By Herpin, Moreau, and some others, the attacks of every variety of nervous affection in parents is included among the hereditary influences to which epilepsy is often traceable. The fact, however, may be more correctly stated, perhaps, by saying that the offspring of those who have suffered from nervous diseases, inherit a peculiar condition of organization which predisposes them to the occurrence of the same class of affections, including, of course, epilepsy.

Whatever relation may be supposed to exist between an albuminous condition of the urine and the epileptic convulsions incident to the pregnant, parturient, and puerperal female, with which it is so commonly associated, it is very certain that no such relation exists between albuminuria and epilepsy as it generally occurs, inasmuch as no uniformity can be traced between the presence of albuminous urine and the occurrence of epileptic seizures in the male and in the unmarried and non-puerperal female.

"Albuminuria." Dr. S. remarks, "when present, by impoverishing the blood, or by the coincident relation of urea in the blood, may, and frequently does, nevertheless, appear to cause epileptic seizures; but in the great majority of cases of epilepsy, no palpable derangement of the renal secretion can be detected."

An impaired state of the digestive organs, and more or less derangement of the intestines are very generally present throughout the entire course of epilepsy. Frequent disturbance of these organs may probably in some instances lay the foundation—aet as a predisposing cause of the disease. The entire assemblage of stomachic and intestinal ailments so generally observed in epileptics are to be viewed, however, in most instances as indications of that general condition of impaired health upon which the predisposition to epilepsy properly depends.

One of the most frequent causes of epilepsy in the male is unquestionably masturbation. In the female it may also be traced to the practice of self-abuse, but much more rarely. In her, epilepsy has a more marked relation to derangements of menstruation—some degree of which very generally attends the disease. Such derangements, however, as Dr. S. very truly remarks, "may not be regarded in any other light than as indicative of a general derangement of the system, coincident with the epileptic paroxysm, and though not causing, yet favouring, its occurrence."

Dr. S. says nothing in respect to the predisposition to epilepsy generated by the intemperate use of intoxicating drinks; in the course of our experience we have certainly found the drunkard to be particularly prone to epileptic seizures. In one hundred and eleven cases of epilepsy, the histories of which we have collected, thirty-one were clearly traceable to intemperance.

Epilepsy is a frequent consequence of premature synostosis of the cranial sutures and fontanels. Although this has been shown to be the case by Müller and other of the German writers, and by one or two English observers, it is not noticed by either of the writers, whose works are before us. The subject will be found to be fully discussed in a paper by Dr. Jacobi, in the volume of "Contributions," noticed in the present number of this Journal.

In a large number of instances no particular circumstance can be fixed upon as the exciting or immediate cause of the epileptic paroxysm. Among the most frequent of the exciting causes, have been enumerated fright and fear, intense mental application and excitement, intense mortification, vio-

lent anger, inordinate joy, prolonged intense anxiety, the unexpected receipt of good or bad news, the onset of fever, of smallpox, etc., teething, difficult menstruation, falls from a height, blows on the head, insolation, sexual indulgence, etc.

Although it is very certain that the epileptic seizure may be brought on by suddenly excited, intense mental emotions, and perhaps, also, by various purely physical impressions; as well as by certain pathological occurrences—anything in fact that shall induce a direct morbid impression upon the nervous centres, or an irritation in some remote part or organ reflected upon the brain and spinal cord, still there is some doubt as to the actual efficiency as exciting causes, of many of the circumstances enumerated as such. As Dr. S. remarks, no one of the conditions which in some individuals would appear to be the immediate agents of the epileptic fit, are found to be generally or necessarily so; they occur very frequently in other individuals without giving rise to any form whatever of spasmodic disease.

In many of the cases of what has been termed the eccentric form of epilepsy the importance of ascertaining the exciting cause of the attack is rendered evident by the fact that when this has been detected and removed the epilepsy has ceased.

"It would appear," says Dr. S., "more in consonance with observed facts to regard epilepsy as an affection invariably dependent upon some hitherto unexplained derangement in the nervous system, often dormant for years, and even for life, unless the exciting cause comes into operation. If this view be correct, a distinction between essential and non-essential epilepsy cannot be said to exist; but wherever a paroxysm has occurred, we should assume the same peculiarity of the nervous system to prevail in a stronger or feebler degree, and the difference would be mainly in the agent which roused this susceptibility into action. To revert to a former simile, the diathesis may be compared to combustible material of greater or less inflammability, which differs in the facility with which it will take fire, but will infallibly do so if a flame of sufficient intensity is brought into contact with it. Protect it from the flame, and the combustion will not take place. The same we constantly find to be the case in epilepsy; remove the exciting cause, and the fits will remain in abeyance, allow the flame to be approximated, and the combustible mixture in your patient's system will certainly take fire, the proximity necessary for the purpose constituting the main difference between two different subjects. I have seen this so frequently, that it is one ground why I would specially warn the young practitioner who acts upon these views from placing undue reliance upon the medicinal agents which he prescribes while giving other directions in consonance with the views just detailed. Thus I have again and again found that a continuance of the same active and restless mode of life pursued by a patient at the time of consultation prevented the pharmaceutical appliances from producing a satisfactory result. The patient has then been placed in other circumstances, or has withdrawn from the previous avocations, allowing body and mind the proper rest, and the exciting cause being withdrawn, the nervous system had time to recover its tone, and if not a permanent, still a temporary cure was the result—a cure to all intents and purposes, because it was shown that the epilepsy was under the control of external influences."

Prominent and characteristic as are the phenomena of epilepsy, morbid anatomy has failed in the detection of a single uniform lesion, whether of the cerebro-spinal axis or other organ, by the presence of which the functional disturbances which attend the disease could be satisfactorily traced to certain definite organic changes.

It is impossible, Dr. S. observes, to overlook the manifest relation which the state of nutrition and the blood exercises upon the nervous system in the

production of what are denominated nervous symptoms in disease; and of all the influences that we can trace in the production of epilepsy, we see none that operate so frequently as those which are connected with some derangement of nutrition. And yet there is no definite change in the excretions which can be shown to be a uniform accompaniment of epilepsy.

Many patients who have died after suffering for a long period from epileptic disease, present upon dissection various lesions, particularly of the brain—such, however, is far from being uniformly the case, and when it does happen, no definite relation between the lesions that are present and the epileptic phenomena can be traced. Similar lesions also have been detected in the body of such as never exhibited, during their entire lives, any epileptic symptoms.

Among the lesions that have been most frequently detected in the bodies of epileptics may be ranked perhaps hypertrophy and increased density of the brain. These morbid conditions, if any confidence is to be placed in the observations of M. Ferrus, are invariably present. Another very frequent lesion, according to Dr. Boyd, of England, is a want of balance between the weight of the two cerebral hemispheres. It was present, he informs us, in nearly all the cases he examined post-mortem. If the observations of Dr. Wenzel, of Mayence, were accurately made and are correctly reported, a diseased condition of the pituitary body and pineal gland is also to be viewed as at least a very frequent, if not an invariable lesion in cases of epilepsy. Dr. Wenzel found it to be always present in the epileptic, he does not pretend to say, however, that its presence is invariably attended by epilepsy.

A very excellent analysis of the various post-mortem appearances that have been detected in the bodies of epileptics is given by Dr. Sieveking, together with an inquiry into the probable relation of these lesions with the predisposition to, and actual induction of the epileptic paroxysms, and with the various morbid phenomena exhibited during, or in the intervals of the paroxysms.

We now come to the important question, what is the true theory of epilepsy? The answers which Drs. Sieveking and Radcliffe give are, though dissimilar in the terms in which they are expressed, pretty nearly the same in substance; both consider the disease to be produced by causes which impair the healthy condition of the blood, and augment the susceptibility of the nervous system to the impression of abnormal impressions. Both recognize epilepsy as an affection of the encephalon, and especially of the sensory ganglia, with secondary implication of the spinal cord. The control of the brain, according to Dr. S., being withdrawn, the spinal system acquires a preponderating action, as shown in the spasmodic action of various muscular terminations of spinal nerves. With Dr. Radcliffe the condition of the brain and spinal cord are alike due to a deficient supply of arterial blood, and according to a theory of muscular action adopted by him, the convulsive movements of epilepsy are caused by a failure in the supply of "nervous influence" to the affected muscles, in consequence of a failure in the action of the nervous centres.

It will be impossible for us to present any more than a brief outline of the views advanced in the two works under review, in respect to the pathology of epilepsy, and this we shall endeavour to do, as far as possible in the authors' own words.

Dr. Sieveking believes that, in the great majority of instances, the first attack of epilepsy is due to an irritation produced by derangement in the

amount or quality of the blood circulating in the brain. In a person predisposed we frequently find, he remarks, over-fatigue, a long walk, carrying heavy loads, prolonged mental exertion, the manifest cause not only of the first, but of many succeeding seizures.

In respect to the repetition and perpetuation of the disease, Dr. S. observes:—

“It is a fact familiar to every medical man, that an individual part which has once manifested a peculiar susceptibility is prone to take on diseased action again, and that a frequent occurrence of disease in a part renders treatment more difficult at each succeeding attack.”

“In a disease like epilepsy, habit plays an undoubted and very important part. Every successive attack strengthens the habit, and renders the individual more obnoxious to future seizures; every arrest or postponement of a seizure is so much gain in favour of the patient, not only by avoiding the pain and risk of the isolated paroxysms, but still more by diminishing his future liability to the disease. Believing, as I do, that wherever we meet with epilepsy there is the same fundamental weakness of the cephalic nervous centre, and that, by repetition of the attack, the same ultimate results may be brought about, whatever the exciting cause may have been, the necessity of seeking by every means in our power to weaken, if we cannot succeed in breaking, the strong links which constitute habit, becomes an imperative law for the physician.”

“In considering the theory of epilepsy,” Dr. S. continues, “its relation to other diseases, and especially to those of a spasmodic character, must be borne in mind. There is much and powerful evidence to show that epilepsy belongs to a group of affections which are closely allied to one another, and hence exhibit many transition forms which have given rise to confusion in the minds of medical men. The eclampsia of early childhood, laryngismus, or spasm of the glottis, may be especially mentioned as belonging to the same category as epilepsy. The main reason why, in infants, the convulsive character is not so prominent as in children of a larger growth, would seem due to that very impressibility which gives rise to the nervous symptoms on a comparatively slight stimulus. Their muscles and the spinal nerves have not reached that period of robust development which maintains later; whilst the slightest interference with the organs of respiration, dependent, as in the cases adverted to, upon spasm in the superficial or deeper seated muscles of the neck, causes loss of consciousness. We constantly see the gradations from the merest crowing inspiration, to the most confirmed convulsive seizure in the same infant, while the recurrence of the well-marked epileptic seizure in the adolescent or adult is preceded in a sufficient number of times by infantile fits to justify the assumption of a close relation between the two.”

With respect to the experiments of Dr. Brown-Séquard and his deductions from them in reference to the pathology of epilepsy, Dr. Sieveking remarks, that the seizures that were induced in them appear to have borne more the character of tetanus than of epilepsy. Such a state of hyperæsthesia as occurred in the animals operated on, Dr. Sieveking denies to be a feature of epilepsy in the human subject, in whom the evidence, to his mind, shows irrefragably the brain to be the organ primarily involved—the phenomena of the disease would seem, indeed, to show that it depended essentially on a deranged condition of cerebral nerve power, and to negative the supposition of its connection with spinal lesion.

The state of the blood, Dr. S. believes to exercise a material influence in the production of epilepsy. He thinks that the close alliance between epilepsy and scrofulous affections points in this direction, while, in the great majority of cases, circumstances have preceded the outbreak which notoriously tend to impoverish the blood, and exhaust both the vascular and nervous power.

"But," he adds, "although the disturbed polarity which induces the paroxysm most frequently depends upon exhaustive conditions, so much so that some writers, among whom I would specially mention Dr. Radcliffe, regard this class of causes as the sole indication for treatment; I am satisfied that the state of the blood need not necessarily be impoverished, but that various pathological conditions of the blood may be associated with the epilepsy."

Dr. S. believes that the immediate cause of the epileptic seizure may be a preternatural influx of blood upon the brain; he supposes, nevertheless, that, in the vast majority of cases, the patients are in a condition indicating a state of general anæmia, or a dyscrasic state of the circulating fluid.

"A state not certainly always, or even generally, to be measured by a physical standard, but no less recognizable by the physiological tests—the state of the skin, the eye, the tongue, the pulse, the stomach, the intestines, the mental functions. In most acute diseases, even, that we have to deal with, we find that a predisposition is generated by previous debilitating influences—intemperance, debauchery, scrofulous or syphilitic taint, hereditary lithiasis. Such influences necessarily deserve equal attention in a chronic and periodic affection like epilepsy; and it is impossible to disconnect such influences, even in a disease so peculiarly in the domain of the nervous system, from a blood-lesion."

Dr. Radcliffe believes that from defective action in the excretive organs, a diseased condition of the blood will be produced, which may concur in bringing about an attack of epilepsy. He believes that in every case of the disease there is a want of vigour in the circulation. That during the paroxysm there is impeded respiration, and an overloaded condition of the venous system generally. This condition of things being assumed, the inference deduced by him is, that the convulsive seizure is intimately connected with the want of a due supply of arterial blood to the cerebro-spinal centres. He denies that either venous congestion or arterial injection of the brain are in any way concerned in the production of epilepsy.

"No doubt," he remarks, "the veins of the brain and head generally are congested from a very early moment, but there is a moment antecedent to this, in which the death-like paleness of the face, in many cases at least, is a sufficient proof that the veins were emptier than usual before they became congested. Indeed, it may be supposed that this was the case in the majority of instances, if not in all, for there would seem to be no way of accounting for the instantaneous loss of consciousness and sensibility (which is in reality the first phenomenon of the fit), except upon the supposition of some sudden failure in the supply of blood to the great nervous centres. At any rate, the well-known anatomical difficulty is not the sole difficulty which has to be overcome before it can be supposed that Dr. Marshall Hall's hypothesis of *trachelismus*, or the prevention of the return of blood from the brain by the spasm of certain muscles in the neck, has anything to do with the causation of epilepsy."

Deficient activity of the nervous system plays, according to Dr. R., a most important part in the production of the disease. During the convulsion the state of the brain he sets down as one of coma. That is to say, during the convulsion, the state of the brain, regarded mentally, is one of extremest inaction. Such is also, he maintains, the condition of the medulla oblongata, the spinal cord—every portion, in fact, of the nervous centres. The morbid irritability of the muscular system—that state in which the muscles are said to be more apt to contract when irritated, and more prone to remain contracted when once they have contracted—is, according to Dr. R., dependent upon a deficient supply to them of nervous influence.

"There is then," he remarks, "no necessity to look upon this morbid state of irritability as an evidence of the existence of any peculiar condition in some

part of the nervous system, for thus interpreted, it only signifies a state in which the muscles are ill supplied with nervous influence. Thus interpreted, indeed, morbid irritability only becomes another name for inefficient action of the nervous system. The pathology of epilepsy, therefore, as deduced from a consideration of the phenomena belonging to the nervous system is in harmony with what had been already deduced from a consideration of the phenomena belonging to the vascular system, and the conclusion is precisely what was to be expected from the previous investigations respecting the physiology of muscular action. From these previous investigations it was to be expected that coma and convulsion might go hand in hand together; for muscular contraction, according to these investigations, is to be looked for when a failure in the action of the nervous centres causes a failure in the amount of nervous influence distributed to the muscles."

To understand fully the pathology of epilepsy advocated by Dr. Radcliffe, it will be necessary to inform the reader that, agreeably to the physiology of muscular motion adopted by him, *muscular contraction* is not the result of the *stimulation* or excitation of any property of *contractility* belonging to the muscle. That by the simple physical action of certain agents—electricity, irritation, nervous influence, etc., *muscular elongation* is produced; *muscular contraction* being simply the *physical consequence of the cessation of such elongation*.

However accurately the theories of epilepsy advanced by Drs. Sieveking and Radcliffe may be admitted to depict certain of the morbid conditions which concur in the production of the disease; however correctly they may be found to explain certain of the links in the chain of causation upon which the morbid phenomena exhibited by the epileptic patient from the period of his first seizure until the termination of his disease or of his life, depend; they cannot be received as affording a full and satisfactory solution of the entire pathology of epilepsy, the nature of the lesions upon which the disease depends, and why those lesions give rise to the particular morbid phenomena pathognomonic of it. For such light, however, as they are adapted to throw upon these interesting questions, small as this may be, the views advanced in the works before us, with the facts and arguments by which the accuracy of those views are attempted to be proved and enforced, deserve the notice and careful study of every physician.

A leading—perhaps the most important—result the physician hopes to derive from the discoveries he may be enabled to make in regard to the actual seat and character of the lesions upon which any given disease depends, and the causes to which those lesions owe their existence, is to enable him to fix upon the means best adapted for its prevention or its cure. We fear, however, that, in the case of epilepsy at least, no such result can be rightfully claimed for any of the theories, including those advanced in the two works before us, that have as yet been published; and that so far from its treatment being prompted and guided by an exact knowledge of the etiology and pathology of the disease, our acquaintance with its appropriate prophylaxis and treatment must still be acquired empirically.

If, as was laid down in the commencement of the present article, and the truth of the proposition is substantially admitted by Dr. Sieveking, epilepsy be viewed as an affection dependent upon a certain morbid condition of the nervous system, which renders it liable to act abnormally when subjected to certain causes of irritation which, in the absence of that morbid condition, exercise upon the nervous system no such influence, then the general indications to be pursued in our endeavours to prevent or cure the disease, are sufficiently clear. It must be, evidently, the leading aim of the physician

to prevent or remove the abnormal condition of the nervous centres, and to guard the patients from the sources of the irritation which is found to act as the exciting cause of the epileptic seizure. But though the means by which these objects are to be effected may be shrewdly conjectured, they can be ascertained only by a course of clinical experiments—by the results simply of experience.

We need not stop to inquire what the authors before us lay down as the proper treatment during the epileptic convulsive paroxysm. In no case can it be more than negative, and directed solely to guard the patient from injuring himself, or being injured by the convulsive movements of his muscles, and to abstract everything within our control, that may have a tendency to aggravate the fit, or impede its speedy cessation.

Romberg, Pritchard, and a few others, speak of compression of the carotids as a means of warding off a threatened paroxysm, and of producing a temporary relief of its violence, when present. From the decided testimony borne by Dr. Parry in regard to the beneficial effects of compression of the carotids in allaying pain of the head, sleeplessness and excitement in cephalic diseases generally, Dr. S. concludes that the operation is certainly deserving of an extended trial, inasmuch, "as the postponement of a fit, or even diminution of the severity of the paroxysm is a gain."

Dr. Radcliffe believes, on the other hand, that the evidence offered in favour of the measure is both scanty and inconclusive, and might be easily frittered away by any one who is disposed to be sceptical.

When the paroxysm is preceded by an *aura*, it is asserted upon the best of evidence that if this be, by any means, arrested before it mounts to the head, the accession of the epileptic fit will be prevented. Binding a ligature firmly around the limb in which the premonitory sensation referred to is experienced, between it and the brain, has been found, we are assured, effectually to ward off for the time being an impending paroxysm. The removal of a testicle, of a tumour along the course of a nerve, or of an entire limb along which the aura has been known to proceed, is said to have frequently effected an entire cure of epilepsy. Removing by the trephine a portion of the skull over any part of the brain ascertained to be suffering from mechanical irritation of any kind has, also, it is reported, resulted in the entire arrest of the disease. To such cases, however, undue weight should not be given. We are to recollect that, in very many instances the operations referred to have been performed, and by them supposed offending parts have been removed, without the slightest beneficial results.

So far as we are able to judge from the recorded experience of the medical profession in reference to the subject, the exhibition of no article included in either of the classes of remedies which make up our lists of the *materia medica*, has been found to exert any more than a very uncertain and limited control over the violence or frequency of the epileptic seizures, and has seldom exhibited any uniform and decided agency in causing their entire suspension.

A preliminary measure essential to the success of whatever treatment we may adopt for the cure of epilepsy, is the removal of the patient from the influence of all those circumstances, so far as they can be detected, and are under our control, which may act as predisposing or exciting causes of the disease, whether of a mental, moral, or physical character; while at the same time, by a well-selected, nutritive, and invigorating diet, pure air, appropriate occupations, properly regulated exercise, and the cultivation of

cheerfulness, hope, and confidence, we endeavour to improve the nutrition, the tone, and the healthful rhythmical action of the system generally.

Every epileptic should be examined fully, carefully, cautiously, as to his predisposition to disease, and with the view, also, to detect improper habits and vices and indulgences, incorrect modes of living, etc., as well as to discover any morbid condition that may be present in either of the organs of the body, in order that the proper remedies may be applied to counteract and change the first, and to remove promptly the latter. In the general correctness of these views both the writers under review coincide.

"In any case of epilepsy," Dr. Radcliffe remarks, "there is no question as to the necessity of ordering the habits of the patient in such a way as to save the strength as much as possible. There is no question as to the advisability of continence in sexual matters. There is no question as to the advisability of not taxing the brain with severe study. But there may be a question as to the correctness of the rule which is usually laid down with regard to bodily exercise. There would seem to be no ground for supposing that the epileptic had any spare energy which must be worked down by exercise, and, so far, this idea is confirmed by experience. More than once, I have found a patient begin to improve when he became careful to avoid muscular fatigue; more than once I have known a patient begin to retrograde, who began to try his strength too speedily."

Dr. Sieveking says that if he were to formalize the mode of treatment pursued by him, he would say that it consisted in local derivatives, or counter-irritants directed against cerebral congestion, in connection generally with roborants or tonics; the special manner in which the indication had in view in the employment of the latter is to be carried out being based upon the result of the inquiries made into the condition of the individual organs.

Intense and continued headache in the epileptic, whether as a precursor or sequel of the convulsive paroxysm, Dr. S. always meets by counter-irritation to an extent proportioned to the intensity of the symptom. Either blisters to the back of the neck, repeated, or kept open by the application of savine ointment, or setons or issues to the neck, are the means of counter-irritation usually employed by him. Dry cupping he has, also, in many cases found beneficial.

The abstraction of blood may, Dr. S. thinks, be demanded in sanguineous epileptics, residing in the country, but, as a general thing, he joins with those who deprecate bloodletting in those subject to epilepsy. Purgatives, he believes are demanded to remove from the bowels retained feces, or any other irritating matters that may be present in them, and also to restore certain physiological secretions. Mercurial purgatives, and those of a drastic character, he objects to, and advises the selection to be made from among those that are of a warm aromatic character.

"The costiveness," says Dr. S., "of many of our overworked and anæmic patients will be better met by a large dose of quinia, or by *mnx vomica* or its alkaloid, than by a purgative draught. In some cases, possibly, even an opiate or a sedative will more readily induce a regular action of the bowels, by overcoming a spastic condition of the intestinal muscular fibre."

Dr. Radcliffe is opposed to every kind and degree of depletion in epilepsy, whether by venesection or by purgatives. He insists upon the necessity of a tonic and stimulating course of treatment, with a full diet of good substantial food, and a liberal allowance, at the same time, of beer, wine, coffee, etc. Dr. R. concedes, however, to counter-irritants the good effects that have



been ascribed to their use in epilepsy, especially such of them as excite inflammation without being attended by any exhausting discharge. They act, he thinks, not by overcoming congestion, the existence of which he denies, but by withdrawing some morbid irritability from a vital organ. He believes that it is as a counter-irritant, cauterization of the larynx, as proposed by Dr. Brown-Séquard, and practised by Dr. Watson, of Glasgow, and others, does good. The hint given by the first named gentleman, in pointing to the larynx and the locality in which *the aura* originates, as the sites in which the counter-irritation *may be* especially serviceable, Dr. R. believes may prove one of much practical value.

There are times, Dr. R. admits, in which the stimulant and tonic course of treatment must be suspended.

"If, for instance, the urine on cooling becomes thickened with lithates, not only may tonic and stimulant medicines have to be suspended, and the quantity of animal food and beer reduced, but a few grains of an alkaline carbonate, and a few drops, perhaps, of tincture of colchicum—I think I have seen much good from this addition in many cases—may be taken with advantage an hour before breakfast, for a few days in succession. Or, if the bowels become obstinate, it may be necessary to recommend more fruit or salad, more walking exercise, with enemata of cold water or brine, and so on. Or, if the action of the skin flags unusually, it may be well to advise the use of a few warm baths, in addition to the ordinary practice of sponging with tepid water. In a word, any of the many minor changes which are continually happening in the system will have to be recognized and met, and not only so, but no small part of the success in treatment will always depend upon the tact and promptitude with which such changes are recognized and met."

Dr. Sieveking speaks in commendation of turpentine, as a remedy in epilepsy, especially when the disease occurs in females, both on account of its primary action on the intestinal canal, and its secondary stimulating effect upon the uterus, when its regular functions are impaired. We have found equally good effects to result from the use of the turpentine in the male as in the female epileptic.

Dr. Radcliffe also bears testimony to the value of turpentine in cases of epilepsy generally; on account, however, of its nauseous taste, he has usually substituted naphtha, purified by redistillation. The following is a formula according to which he often administers it: *R.*—Naphthæ purificatæ, tr. humuli, tr. valerianæ, āā ʒss; aquæ menthæ pip. ʒss; aq. destillatæ, ʒj. *M.* for a dose. When chalybeates are indicated he has sometimes added from five to ten grains of the ammonio-citrate of iron.

As tonics in epilepsy, Dr. S. places the preparations of iron and of zinc at the head of the list, and indicates Allarton's steel biscuits as a very elegant form of administering iron, particularly to young children. They are very palatable, and will be eagerly taken even by the infant.

Of the different preparations of zinc Dr. S. prefers the sulphate on account of its solubility. It is best adapted, he thinks, to cases of what has been termed the centric form of the disease. It may be given in the form of pills combined with extract of gentian, or dissolved in infusion of valerian, or in other combinations indicated by the particular case. The valerianate of zinc and the valerianate of iron present combinations of the bases referred to with valerianic acid, which may be given also with advantage. By cautiously increasing the dose of the sulphate of zinc, the patient can be brought to take it in very considerable doses without any inconvenience.

Dr. Radcliffe has no faith in the anti-epileptic properties of zinc; iron, however, he has used as a fundamental element in the treatment of the

disease, for the last seven or eight years, and with the most encouraging results.

If steel, says Dr. Radcliffe, has done good in epilepsy, it might reasonably be expected that the same result would also be experienced from the use of quinia. It has been employed by several practitioners, among the rest, by Rostan and Piorry, and cases are on record in which the epilepsy is supposed to have been cured by it. Dr. R. has given it without much selection as to particular cases, and scarcely ever, he assures us, if ever, without benefit. He has usually prescribed, it is true, the quinia along with other remedies, but he feels convinced that to it some share of credit is due for the benefit that ensued.

"Among tonics," remarks Dr. Sieveking, "we must not forget to mention strychnia, which, in suitable doses, acts as a general roborant, and diminishes that irritability of the nervous system which prevails in persons subject to epileptic seizures. The extract of *nux vomica* in half grain doses three times a day, with extract of gentian, acts in a similar way; and it is worthy of remark that we often observe the sluggish state of the bowels associated with epilepsy rectified by the administration of the remedies just spoken of, in such a manner as to render the employment of direct purgatives unnecessary."

Dr. Radcliffe believes that, considering the smallness of the dose to which Dr. Marshall Hall would restrict the use of strychnia in epilepsy, the *modus operandi* of the article as shown by the researches of Dr. Harley, and the pathology of epilepsy, it is not likely that it will prove a valuable remedy in that disease.

The preparations of silver have failed, in the hands of Dr. S., to exert that influence over epilepsy which he was led to anticipate from the favourable reports of others. The verdict of Dr. R. is equally adverse to the claims that have been set up in favour of the salts of silver as remedies in epilepsy.

"It would be useless," observes Dr. S., "to attempt to lay down specific rules for the mode of administering the drugs already spoken of, since the general laws of pathology and therapeutics apply equally to the treatment of epilepsy as to any other disease; therefore, as a matter of course, the endless complications which may accompany epilepsy must be borne in mind, and the necessary remedies ordered accordingly. As long as an irritant of any kind resides in the system it would be next to useless to seek to counteract the spasmodic diathesis; the former must be first removed before we can expect successfully to combat the latter. The weak or diseased condition of any organ, though possibly not bearing any immediate relation to the paroxysmal affection, demands the physician's attention previous to, or in conjunction with, the radical treatment to be adopted. To give a detailed account of all the circumstances that might arise here, would render necessary a review of the whole domain of pathology."

The ordinary antispasmodics exert, according to Dr. Sieveking, no influence over the epileptic paroxysm. A similar experience would appear to be that of Dr. Radcliffe also.

In regard to narcotics, the first-named writer thinks we would do well to employ them more frequently than we do at the commencement of epilepsy, as we can scarcely doubt that during sleep an irregularity in the action of the nervous system supervenes, such as may be met by soothing agents. He condemns opium in these cases, preferring morphia and its salts, hyoseyamus, conium, belladonna, hydrocyanic acid, and, in some cases, perhaps chloroform.

Dr. R. has rarely found camphor, in doses of from two to six grains, either alone or in combination with either quinia or iron or both, to fail in

doing good. Chloric ether and Hoffmann's anodyne would seem to him to be also adjuvants of no small value. The first he has often given in half drachm doses, either alone or in combination with steel, quinia, or naphtha. When some temporary stimulation is called for, he has found the chloric ether, in drachm doses, with or without a little warm wine and water, a very effectual remedy. There is no better means to quiet the agitation so frequently the precursor of an attack in many of those cases which are partly epileptic and partly hysterical in their character.

The aromatic spirits of ammonia, also, Dr. R. pronounces a valuable adjuvant that may often take the place of chloric ether with advantage.

With respect to indigo, so strongly recommended by Professor Ideler, of Berlin, and Dr. Rodrigues, of France, Dr. Sieveking thinks that we are warranted in employing it when other means fail. With the effects of the article in epilepsy Dr. Radcliffe has no experience.

Dr. S. has administered the *cotyledon umbilicus*, or navelwort, in numerous cases of epilepsy; and generally speaking, the patients have appeared to be benefited by doses of from thirty grains and upwards of the extract, three times a day. He thinks the remedy worthy of some consideration. Dr. R., on the other hand, says, that there would seem to be "nothing in experience, and less in the simple itself," to warrant any hope of benefit from its use, except that which arises from the exercise of the imagination of the patient.

With regard to the value of *tracheotomy* as a remedy in epilepsy, Dr. Radcliffe believes that it is impossible to arrive at a sound conclusion until there is a greater amount of evidence furnished us.

"Still," he remarks, "it is evident that this measure does not realize all the original hopes of Dr. Marshall Hall. It does not prevent convulsion. It does not always, perhaps not usually, make the convulsion slighter. It does not prevent danger, for, as I have shown elsewhere (*London Lancet*, May 14th, 1853), of the few patients upon whom the operation has been performed, three have died either in the fit or in connection with the fit; and of the three, the opening in the windpipe was free from all obstruction—at least in one. Under these circumstances, therefore, it becomes a question whether the supposed benefits of the operation are sufficient to counterbalance the associated inconveniences and dangers, even where, what rarely happens, the asphyxial symptoms are in any degree dependent upon spasmodic closure of the glottis."

The remarks of Dr. Sieveking on the hygienic and moral treatment of epilepsy are peculiarly interesting. Strongly should it be urged upon the mind of the practitioner that moral and hygienic remedies are equally efficient in promoting, and moderating, and curing the disease as are the resources of the materia medica, in many cases even more so. To direct aright our remedial measures, every influence to which the patient affected with epilepsy may be exposed should be carefully investigated, and so directed, managed and controlled, if within our reach, as to promote the health and vigor of the entire organism. The air he breathes; the water he drinks; the clothes he wears; his ablutions; his daily occupations and habits; his amusements; his food and drinks; his mental and moral habitudes; the moral influences by which he is surrounded, and his pecuniary, civic and business condition and relations, all should be inquired into, and, so far as they require and admit of it, changed or modified in accordance with the precepts of a correct hygiene. Such a course is essential as well in reference to the prevention as to the cure of epilepsy.

The sketch presented by Dr. Sieveking of the moral and hygienic treat-

ment of patients predisposed to, or actually labouring under epilepsy, is a very well-defined, ample, and able one; correct in the principles upon which it is based, and sound in the remarks it contains in reference to the employment of special moral and hygienic means in the varying circumstances and aspects under which the disease presents itself.

Dr. S. sums up his exposition of the moral and hygienic management of epilepsy—a subject that, as he justly remarks, demands on the part of the physician an intimate appreciation of character and of the relative influences of psychical and physiological functions—with the caution to the practitioner, to examine every case on its own merits—to decide upon the treatment to be adopted according to the conclusions thus carried out, and to consider attention to nothing which may have a bearing upon the social, or moral, or physiological circumstances of the patient as beneath the dignity of science.

We commend both the works before us to the favourable notice of our readers. We take pleasure in saying that from an attentive study of them—but especially of the treatise of Dr. Sieveking—we have been much gratified and instructed.

D. F. C.

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ART. XIV.—*A Treatise on Gonorrhœa and Syphilis.* By SILAS DURKEE, M. D., Fellow of the Massachusetts Med. Soc., etc. etc. With eight colored plates. Boston: John P. Jewett & Co. Cleveland, Ohio: Henry P. B. Jewett, 1859. Octavo, pp. 431.

THIS volume, the author informs us in the preface, is constituted in great measure by a Boylston prize essay on “The Constitutional Treatment of Syphilis;” which essay, though modified to a degree that deprives it of its original identity, is believed to have had its intrinsic merits materially enhanced. The solicitations of others, it is declared, have prevented him from allowing the original manuscript to sleep undisturbed. We are informed, moreover, that he has devoted, in public and private practice, more than thirty years to the therapeutics of syphilis and kindred disorders.

The importance of the subjects treated upon in this work, on account not only of the character of venereal diseases, but also of their extreme frequency, together with the very unsettled state of medical science in regard to them, makes us turn eagerly towards any additional information promised respecting them. A calculation made by a distinguished English writer, from estimates he pronounces to be *ridiculously low*, shows that more than a million and a half of cases of syphilis occur every year in England, Wales, and Scotland. Of the out-door patients of the London hospitals, nearly one-half seek relief there for venereal diseases; of this number nearly one-half are women and children. In this country we have no means of forming any direct estimates; but we may infer, as passions are as strong here as elsewhere, and under no firmer control, that these affections are here equally common.

What positive knowledge do we possess in regard to these diseases not only frightful in themselves but frightfully common? There is very little,